SUMMARY OF THE CLAIMS

1. (Cancelled)

2. (Currently Amended)

3. (Currently Amended)

4. (Currently Amended)

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8. (Cancelled)

9. (Currently Amended)

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33. (Cancelled)

34. (Currently Amended)

35. (Original)

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64. (Currently Amended)

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89. (Cancelled)

90. (Currently Amended)

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92. (Original)

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96. (Currently Amended)

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99. (Original)

100. (Cancelled)

101. (Cancelled)

102. (Cancelled)

103. (Cancelled)

104. (Cancelled)

LISTING OF THE CLAIMS:

1. (Cancelled)

2. (Currently Amended) ~~The two-way communication system as recited in claim 1~~ A two-way asymmetric communication system having independently scalable upstream and downstream paths that enable remote data processor devices to communicate with a server, said system comprising:

a common routing/switching backplane for providing intercommunication services among multiple communication devices including said server,

an independent upstream controller in communication with said backplane operating in accordance with an upstream protocol for receiving information packets from said remote data processor devices, said upstream controller including network operating algorithms for analyzing response packets transmitted by said downstream controller to determine operational status of a first identified remote data processor device,

an independent downstream controller in communication with said backplane for transmitting data packets to said remote data processor devices in accordance with a downstream protocol, said independent downstream controller being operative to transmit control packets directed to a first identified remote data processor device that instructs said device to respond with predetermined information in accordance with said control packet,

a network manager in communication with said independent upstream and downstream controllers through said backplane for effecting management of two-way communications between said first and second remote data processor devices and said server; and

including multiple sub-channels in a downstream path and a bandwidth manager for dynamically balancing traffic loads in the downstream path in order to provide greater use of available downstream channels according to ~~give in~~ traffic conditions.

3. (Currently Amended) The two-way communication system as recited in claim ~~1~~2 wherein said independent upstream and downstream controllers comprise separate and independent hardware components including interface cards mounted in a rack.

4. (Currently Amended)   The two-way communication system as recited in claim ~~1~~2 wherein said common switching/routing backplane comprises an Ethernet LAN hub.

5. (Currently Amended)   The two-way communication system as recited in claim ~~1~~2 wherein said downstream controller effects transmission of control packets that detect assignment of upstream transmit frequency utilized by a remote processor device, and said remote processor device assembles and transmits response packets which contain information indicative of the upstream transmit frequency being used by said remote processor device.

6. (Currently Amended)   ~~The two-way communication system as recited in claim 1~~ A two-way asymmetric communication system having independently scalable upstream and downstream paths that enable remote data processor devices to communicate with a server, said system comprising:

a common routing/switching backplane for providing intercommunication services among multiple communication devices including said server,

an independent upstream controller in communication with said backplane operating in accordance with an upstream protocol for receiving information packets from said remote data processor devices, said upstream controller including network operating algorithms for analyzing response packets transmitted by said downstream controller to determine operational status of a first identified remote data processor device,

an independent downstream controller in communication with said backplane

for transmitting data packets to said remote data processor devices in accordance with a downstream protocol, said independent downstream controller being operative to transmit control packets directed to a first identified remote data processor device that instructs said device to respond with predetermined information in accordance with said control packet,

a network manager in communication with said independent upstream and downstream controllers through said backplane for effecting management of two-way communications between said first and second remote data processor devices and said server; and

wherein said downstream controller applies forward error correction to control packets transmitted on said downstream channelpaths.

7. (Currently Amended) The two-way system as recited in claim 56 wherein said forward error correction includes Reed Solomon encoding and interleaving of information packets.

8. (Cancelled)

5   9. (Currently Amended) The two-way communication system as recited in claim 1 A two-way asymmetric communication system having independently scalable upstream and downstream paths that enable remote data processor devices to communicate with a server, said system comprising:

a common routing/switching backplane for providing intercommunication
10   services among multiple communication devices including said server,

an independent upstream controller in communication with said backplane operating in accordance with an upstream protocol for receiving information packets from said remote data processor devices, said upstream controller including network operating algorithms for analyzing response packets transmitted by said
15   downstream controller to determine operational status of a first identified remote

5   data processor device,

        an independent downstream controller in communication with said backplane
for transmitting data packets to said remote data processor devices in accordance
with a downstream protocol, said independent downstream controller being
operative to transmit control packets directed to a first identified remote data
10   processor device that instructs said device to respond with predetermined
information in accordance with said control packet;

        a network manager in communication with said independent upstream and
downstream controllers through said backplane for effecting management of two-
way communications between said first and second remote data processor
15   devices and said server; and

        wherein said network manager effects configuration management of said
remote devices by effecting issuance of control packets that perform at least
one of: assigning an upstream response frequency; adjusting an upstream
transmitter; assigning an IP address; assigning a local MAC address; assigning
20   an upstream transmit data rate; effecting reporting of status; effecting a
transmission of data by said remote processor ~~device~~devices; assigning a
shared channel for use by said remote processor ~~device~~devices; and assigning a
dedicated channel for use by ~~a~~said remote data processor device.

25   10. (Cancelled)
            11. (Cancelled)
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33. (Cancelled)

34. (Currently Amended) ~~The improvement as recited in claim 31~~

In an asymmetric network having respective upstream and downstream

25   communication paths for enabling a plurality of remote devices to receive

information from a host over a shared medium, the improvement comprising:

plural downstream channels operating over said shared medium, and

a network manager for providing bandwidth management of downstream

bandwidth allocated to respective remote devices over said plural downstream

30   channels;

wherein said network manager further includes operative routines for

detecting service requests for requested bandwidth, for assessing bandwidth

utilization of respective downstream channels on said shared medium, and for

5 <u>assigning additional downstream bandwidth to remote devices in accordance with</u>

<u>said utilization and service requests;</u>

wherein said remote devices include operative routines for determining and gathering statistical data relating to operating characteristics thereof and for reporting said statistical data to said network manager.

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35. (Original) The asymmetric network as recited in claim 34 wherein said network manager utilizes said reported statistical data for allocating upstream channels to said remote devices.

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36. (Cancelled)

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           60. (Cancelled)

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           63. (Cancelled)

           64. (Currently Amended) An asymmetric network system including upstream

20   and downstream channels and utilizing control and response packets for managing

bandwidth and configuration parameters of multiple remote devices in

communication with a host over a shared downstream medium, said network

comprising:

           a first controller located at a head end of said asymmetric network

25   system, to generate a configuration control packet that contains control

information for effecting at least one of upstream channel assignment, transmit

power level, address assignment, and data transmission credit level,

           a second controller located at a head end of said asymmetric network

management system to generate a bandwidth management control packet that

30   effects allocation of bandwidth on said shared downstream medium to said remote

devices, and

           a third controller located at at-least one of said remote devices that

responds to said configuration control packet by transmitting information on said

5   upstream channel in accordance with at least one of said upstream channel assignment, transmit power level, address assignment and data transmission credit level.

65. (Original) The asymmetric network system as recited in claim 64
10   wherein said first controller generates said configuration control packet according to registration information provided by a network operator including IP address assignment and account administration information.

66. (Original) The asymmetric network system as recited in claim 64
15   wherein said first controller generates said configuration control packet for a given remote device according to available unused channels, channel usage by other remote devices, available upstream bandwidth, bandwidth guaranteed to other remote devices, channel usage, class of service of said given remote device and requested demand for bandwidth of said given remote device.

20   67. (Original)   The asymmetric network system as recited in claim 64 wherein said downstream medium comprises a wireless broadcast medium.

68. (Original)   The asymmetric network system as recited in claim 64 wherein said downstream medium comprises a telephony return upstream
25   channel.

69. (Original) The asymmetric network system as recited in claim 64 wherein said downstream medium comprises an RF broadcast and said upstream channel is carried in an RF transmission.
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88. (Cancelled)

89. (Cancelled)

90. (Currently Amended)   A remote device for use in an asymmetric

25   network communication system which includes at least one high-speed
downstream channel operating over a shared medium, said remote device
comprising:

an RF interface for receiving high-speed data transmission over at least
one of said downstream channels,

30   a microprocessor controller for receiving control packets from a network
management system, said control ~~packet~~ packets including control information
for effecting control of at least one of upstream channel assignment, transmitter
level, remote address assignment, and transmission credit value allocated to

5   said remote device, and

said microprocessor controller being responsive to said control ~~packet~~ packets to effect operation at said ~~remote~~ RF interface of at least one of said upstream channel assignment, transmit power level, remote address assignment and transmission credit value.

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91. (Currently Amended) The remote device as recited in claim 90 wherein said microprocessor controller confirms the operation of said remote interface at ~~at~~ least one of said upstream channel assignment, transmit power level, remote address assignment and transmission credit value by 15   returning a response packet to said network management system confirming said operation.

92. (Original) The remote device as recited in claim 90 further including operative routines for gathering statistical operational data about said 20   remote device, and for reporting said statistical operating data to said network management system.

93. (Original) The remote device as recited in claim 90 wherein said microprocessor controller receives network operating software downloaded 25   from said network management system, said network operating software being used for interpreting control packets to effect operation of said remote interface.

94. (Original) The remote device as recited in claim 90 wherein said 30   microprocessor controller unencapsulates said control packets in order to decipher the information content thereof.

5   95. (Original) The remote device as recited in claim 90 further including an upstream transmit power responsive to said microprocessor controller for transmitting upstream data packets to said network management system.

           96. (Currently Amended) The remote device as recited in claim 90
10   wherein said microprocessor controller applies error correction to ~~said~~ information packets <u>which are</u> transmitted upstream to said network management system.

97. (Original) The remote device as recited in claim 90 further including a second RF interface for effecting the transfer of RF data signals in an upstream transmission to said network management system.

98. (Original) The remote device as recited in claim 90 further including a cable return interface for generating upstream information and response packets for transmission to said network management system.

99. (Original) The remote device as recited in claim 90 further including network operating software for use with a telephone return modem of a remote computer to effect transmission of upstream packets to said network management system.

100. (Cancelled)
101. (Cancelled)
102. (Cancelled)
103. (Cancelled)
104. (Cancelled)